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PLANNING & ZONING

Stormwater Management Plan
George Street Lofts
3 & 13 George Street

GENERAL INFORMATION

Project Address:

3 & 13 George Street
Burlington, Vermont

Owner:

3 George Street, LLC
c/o Rick Bove
218 Overlake Drive
Colchester, VT 05446

Engineer:

Clifford R. Collins, Jr., P.E.
Ruggiano Engineering, Inc.
20 Kimball Ave.
South Burlington, VT 05403
(802) 658-2100
cliff@shrugg.com

Brief Project Description:

The applicant is proposing to preserve the historic shell of the main building at 3 George Street, while demolishing the northerly portions of the building along with the single family residence at 13 George Street. The remaining portion of the existing 3 George Street building will be incorporated into a new 4 story multi-family residential building with penthouses and a tavern. Parking for the new structure is provided beneath the northerly portion of the new building. Rooftop runoff will be collected and detained in underground storage tanks, released at rates below the existing "half impervious" condition for the 1 year storm and less than the existing rate for the 10 year storm event. The existing and proposed conditions are further described later in this summary report.

Receiving System Identification:

Stormwater at this location discharges to the existing combined sewer, which is treated at the City's Main Wastewater Plant on Lavalley Lane.

EXISTING CONDITIONS

The site currently consists of two separate parcels, 3 George Street and 13 George Street, as depicted on sheet C-1, the Existing Conditions Plan. 3 George Street consists of an existing 2

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story commercial/residential mixed use building that covers the majority of the property. Stormwater runoff from the rooftop and sidewalks discharges to the surface, and via overland flow to the existing combined sewer/storm drain system. Essentially, the west half of the building drains toward the existing Victoria Place project, and the east half to George Street. 13 George Street, a single family residence, also surface discharges runoff from existing rooftop and driveway surfaces. A large portion of the property is covered by the existing home and driveway. The existing topography generally slopes from east to west, discharging runoff that does not infiltrate to the Victoria Place collection system. The enclosed stormwater models also include the portion of the existing Victoria Place parking area that will be on the 3 George Street parcel after the proposed boundary line adjustment (see Site Plan C-2).

The U.S. Department of Agriculture soils mapping indicates that the native soils at the site consist of Adams and Windsor soils, categorized as hydrologic soil group A (very well drained). Accordingly, for the design 1 year and 10 year storm events, there is essentially no runoff from pervious surfaces. As a result, the enclosed HydroCAD modeling results indicate a substantially reduced existing discharge rate when applying the "half impervious" requirement to the existing conditions model for the 1 year storm. This effectively creates a very conservative pre-development condition, ensuring that the development will actually result in a substantial reduction in the discharge rate from the site for smaller storm events.

PROPOSED CONDITIONS

The proposed George Street Lofts building will be situated on both the 3 and 13 George Street parcels. The roof will be effectively flat, with roof drains collecting stormwater runoff from the building footprint. With the proposed parking being situated beneath the northerly portion of the new building, there will be a substantial reduction in the amount of runoff discharged directly from parking and driveways when compared to the existing conditions. In addition, erosion and sediment suspension in runoff due to impact from water dripping from the existing roofs will be eliminated. This will have a direct effect of improving the water quality of runoff discharging from the site.

While a small portion of sidewalks will discharge toward George Street and Pearl Street, the vast majority of the post-development impervious discharge will be collected from the rooftop and routed through a below-grade stormwater detention tank system prior to discharge to the existing stormwater collection/discharge system on the adjoining Victoria Place project site. The proposed detention tank system has been designed to store and release up to a 10 year storm event while discharging substantially below the existing discharge rate. This is accomplished for both the 1 year and 10 year storm events by utilizing two 3,500 gallon storage tanks in series with a 2 inch diameter slow release outlet and a 4 inch diameter 10 year storm outlet.

The outlet also includes an 8" overflow stand pipe, which will accommodate storms larger than the 10 year event. In the event of a significantly larger storm, the roof drain downspout has also been designed with an overflow that will surface discharge if the tanks are full. The tanks also

include a 12" deep sump, to provide for settling of any sediment that enters the tanks and prevent clogging of the outlet.

STORMWATER MANAGEMENT PLAN

Impervious Change Summary:

Condition	Type	Total Impervious (s.f.)	Effective Impervious (s.f.)
Existing Conditions	Existing Impervious	9,447	9,447
Proposed	Total Proposed (1+2+3)	13,044	Negligible
	1) New	3,597	Negligible
	2) Existing to Remain	0	0
	3) Redeveloped	9,447	Negligible
Net New	Total Proposed - Existing	3,597	Negligible

Stormwater Management Summary:

Because the site discharges to the City's combined sewer system, the proposed stormwater management has been designed to meet the City of Burlington's Hydraulic Capacity Standard. This standard requires a reduction of the post-development peak stormwater discharge rate from the pre-development condition for the 1 year and 10 year, 24 hour storm events. The pre-development discharge rate is considered using half of the existing impervious area for the 1 year storm event. As noted previously, water quality will be dramatically improved by eliminating the majority of direct surface runoff when compared to the existing site conditions. Any snowmelt or minor runoff from the covered parking area will be directed to a catch basin and oil/grit separator as shown on the Site Plan (C-2) and the EPSC Plan (ER-1).

Standard	Amount of Impervious Managed	
	Net New Impervious (s.f.)	Redeveloped/Existing Impervious (s.f.)
Water Quality/Grit Removal	Roof runoff collection and oil/grit separator - 3,597	Roof runoff collection and oil/grit separator - 9,447
Runoff Reduction	Underground detention with controlled slow release	Underground detention with controlled slow release
Q1 peak control/reduction	3,597	9,447
Q10 peak control/reduction	3,597	9,447
Other	Improved water quality in grassed areas by isolating roof runoff, reducing erosion and sediment suspension in runoff	

HydroCAD modeling results for pre and post-development conditions (including half the actual impervious for 1 year existing conditions) are enclosed. This includes separation of the grassed areas from impervious surfaces, as well as modeling the proposed detention tanks. Results are

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included for both the 1 year and 10 year storm events, indicating that the peak discharge rates will be reduced when compared to the existing "half impervious" condition for the 1 year storm, and the actual existing conditions for the 10 year storm event.

Summary of HydroCAD Modeling Results

Site Condition	Discharge Rate (cfs)
1 Year Pre-Development (1/2 of impervious)	0.14
1 Year Post-Development	0.11
10 Year Pre-Development (actual impervious)	1.10
10 Year Post-Development	0.82

Required Plans:

The enclosed plans include:

- C-1, Existing Conditions Plan
- C-2, Proposed Site Plan
- C-3, Details
- C-4, Details
- ER-1, Erosion Prevention and Sediment Control Plan

Stormwater details are included on sheets C-4 and ER-1, primarily. The existing conditions are depicted on sheet C-1. Locations of the proposed stormwater system components are illustrated on both sheets C-2 and ER-1.

Stormwater Operation and Maintenance Plan:

The proposed stormwater system features are depicted on the enclosed plans as noted above. The following inspection and maintenance requirements apply:

Stormwater System Feature	Frequency of Inspection	Items to be Inspected	Maintenance Triggers and Maintenance to be Performed
Catch Basin	Annual	Remaining sump depth	<50% of sump remaining (clean out sump)
Oil/Grit Separator	Annual	Sump depth, baffles	<12" to bottom of baffles (pump out chamber)
Detention Tanks	Annual	Inlet tank – visible grit accumulation	<50% of sump remaining, substantial grit accumulation warrants inspection of rooftop conditions and/or underground piping for deficiencies
Parking Lot Surface	Annual	Visible grit accumulation	Sweep as needed, concurrent with Victoria Place (spring)

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Confirmation that any covered parking/parking garage drainage is connected to an oil/grit separator and discharges to the sanitary sewer:

As depicted on the drawings, the covered parking area will discharge to a new catch basin, through an oil/grit separator, and then into the proposed stormwater detention system. This discharge will consist primarily of snowmelt and rainwater dripping from vehicles with the exception of strong or windy rain events. A check valve will be included on the discharge end of the pipe from the separator to the detention tanks to prevent water from backing up from the storage tanks to the separator, which could cause a surcharge of collected oil. Discharge from the proposed stormwater system is to the City's combined sewer system as previously noted.



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Small Project Erosion Prevention & Sediment Control Plan

This questionnaire, at a minimum, is required to accompany all zoning or building permit applications which involve **400 sq. ft. or more of land disturbance**. Please also provide a site plan indicating the locations of all erosion prevention and sediment control measures (silt fence, hay bales etc).

Properties with greater than 2500 sq. ft. of total impervious surfaces, that are adding more impervious, will also be required to comply with additional long term stormwater management requirements.

1. Project Location 3 & 13 George St
2. Brief Project Description (i.e. house foundation, swimming pool) Demolition of existing buildings and construction of a new mixed-use building with 26 apartments and a tavern.
3. Owner Name: 3 George Street, LLC c/o Rick Bove
4. Owner Mailing Address: 218 Overlake Drive, Colchester, VT 05446
5. Owner Phone: 802-864-3430 6. Owner email: rickbove@comcast.net
7. Contractor Name: unknown
8. Contractor Phone: _____ 9. Contractor Email: _____
10. Estimated Project Start Date Summer 2013 Estimated End Date Fall 2014
11. Area of Land Disturbance 14,900 sq. ft.
12. Total proposed (existing + new) amount of impervious: 13,044 sq. ft.
13. Estimated distance in feet from disturbance to nearest:
 - a. City Sidewalk or Street 0 ft
 - b. Drainage Ditch N/A ft
 - c. Catch Basin (storm drain) 0 ft
 - d. Lake/River/Stream N/A ft
14. Site plan/sketch MUST BE ATTACHED showing the following:
 - ☐ Limits of disturbance
 - ☐ Direction of stormwater flow on site
 - ☐ Location of stockpiles (if any)
 - ☐ Location of sediment control BMP's (silt fence etc.)

EPSC QUESTIONNAIRE (See last page for typical solutions to these questions)

A) Nature of all site disturbances (check all that apply):

X Underground utility trench(es) X curb cut/driveway X foundation X cut/fill/regrading X landscaping

X other demolition

B) Do you anticipate the need for any dewatering of excavations during the construction? *Yes ☐ No

- If yes, how will the pumped water be managed or filtered to prevent the discharge of dirty water?

Pumped water from dewatering activities will be filtered using sediment bags

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C) Will excavated soil be stockpiled on the site? ☒ Yes ☐ No

- If yes, how long will the stockpile be on site? (i.e. 1 day, 1 week) 2 weeks

How do you propose to control erosion of the stockpile? Stockpiles will be surrounded with silt fence

- If no, where is the ultimate disposal of excess soil? Excess soil will become property of the contractor

D) How do you propose to prevent sediment from leaving the site and entering nearby city sidewalks/streets and storm drains and/or lakes, rivers and streams? (see page 4 for examples)

Stabilized construction entrance, catch basin inlet protection, closed excavations, silt fence, mulch, erosion blankets

E) Do you plan to park construction vehicles on or disturb City owned property like the greenbelt area? ☐ Yes ☐ No

- If yes, tell us how you agree to repair all disturbances or damage to City owned property and provide a written approval from the City allowing construction vehicles to park on City owned property. The sidewalk on George street will be replaced, grass restored in greenbelt, and a new street tree planted

- If no, then please monitor all construction and visitor vehicles and advise all not to park on City owned property.

F) How do you propose to either prevent or clean sediment generated from construction vehicles and activities that becomes deposited on City streets, sidewalks, or bikepaths and how frequently this will be done. A stabilized construction entrance will be maintained and existing paved surfaces will be monitored and swept as required to prevent sediment from leaving the site

G) Will stockpiles or disturbed soils be present and/or exposed after Nov. 1st of any construction year? ☐ Yes ☐ No

- If yes, tell us how you plan to stabilize any stockpile and/or disturbed soils. Stockpiles will be minimized. Disturbed soils will be protected with heavy mulch or erosion blankets.

Do you agree to abide by the following conditions?

XY ☐ N Applicant will call 540-1748 or email mmoir@burlingtonvt.us at least 24 hours prior to initiating earth disturbance and submit the **name and contact (cell phone and email) of the erosion control coordinator for the project**

XY ☐ N Applicant will post the notice in a visible location

XY ☐ N I acknowledge that it is the responsibility of the owner and his/her representatives to ensure that:

- sediment does not enter surface water bodies (streams, ditches, ponds, lakes, wetlands etc.)
- sediment does not enter City conveyance infrastructure (catch basins, sewers etc.) and
- All sediment must be removed from the city ROW (sidewalks and roadways) by the end of each work day.

XY ☐ N Sediment control measures will be installed prior to the initiation of earth disturbance.

XY ☐ N During the non-winter construction season (April 15 – November 1): After an initial **14 day** period of initial disturbance, temporary or permanent stabilization (mulching, erosion control matting or tarps for stockpiles, or other approved method) of exposed areas and stockpiles will occur at the end of each work day unless:

- Earthwork is to continue in the area within the next 24 hours and there is NO liquid precipitation forecast for the next 24 hours; or
- If work is occurring in a self contained excavation (no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation or utility trenches.

X Y ☐ N During the winter construction period from November 1 to April 15, any new disturbance must be temporarily or permanently stabilized (mulching, erosion control matting or tarps for stockpiles, or other approved method) will occur at the end of each work day unless:

- Earthwork is to continue in the area within the next 24 hours and there is no rain or precipitation forecast for the next 24 hours; or
- If work is occurring in a self-contained excavation (no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation or utility trenches)

XY ☐N The perimeter of the site and all BMPs will be inspected at the **end of each workday** to ensure that sediment will not leave the site. If sediment has travelled beyond the site boundary, it shall be swept up or otherwise removed and deposited on-site in an upgradient area at the **end of each work day**.

AGREEMENT

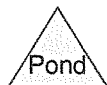
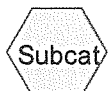
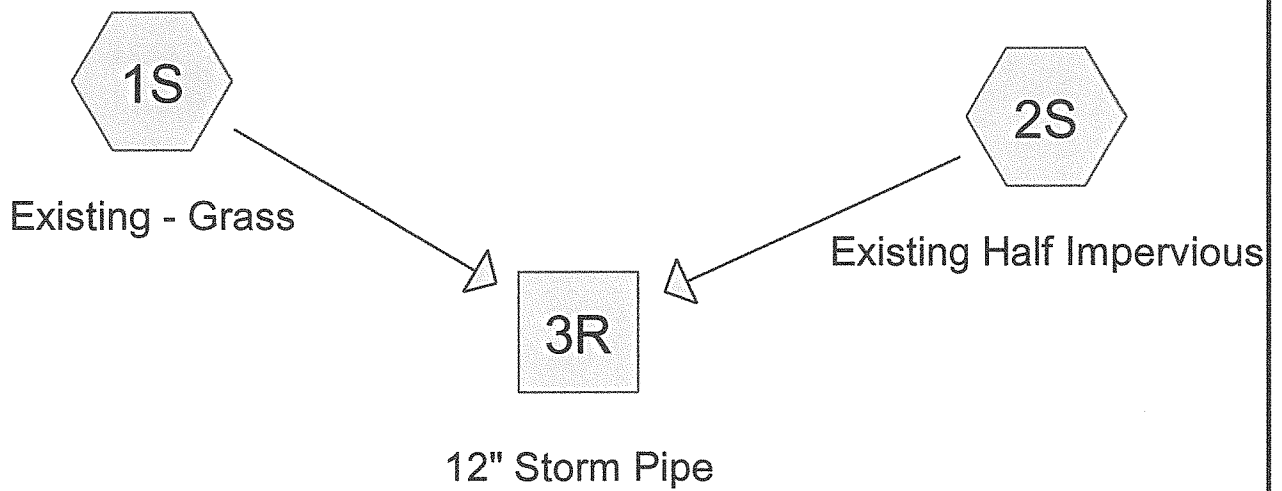
Additional Conditions of Approval:

Required Compliance Items:

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Drainage Diagram for 3 and 13 George St Existing-Split
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3 and 13 George St Existing-Split

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Type II 24-hr 1 Year Rainfall=0.90"

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Subcatchment 1S: Existing - Grass

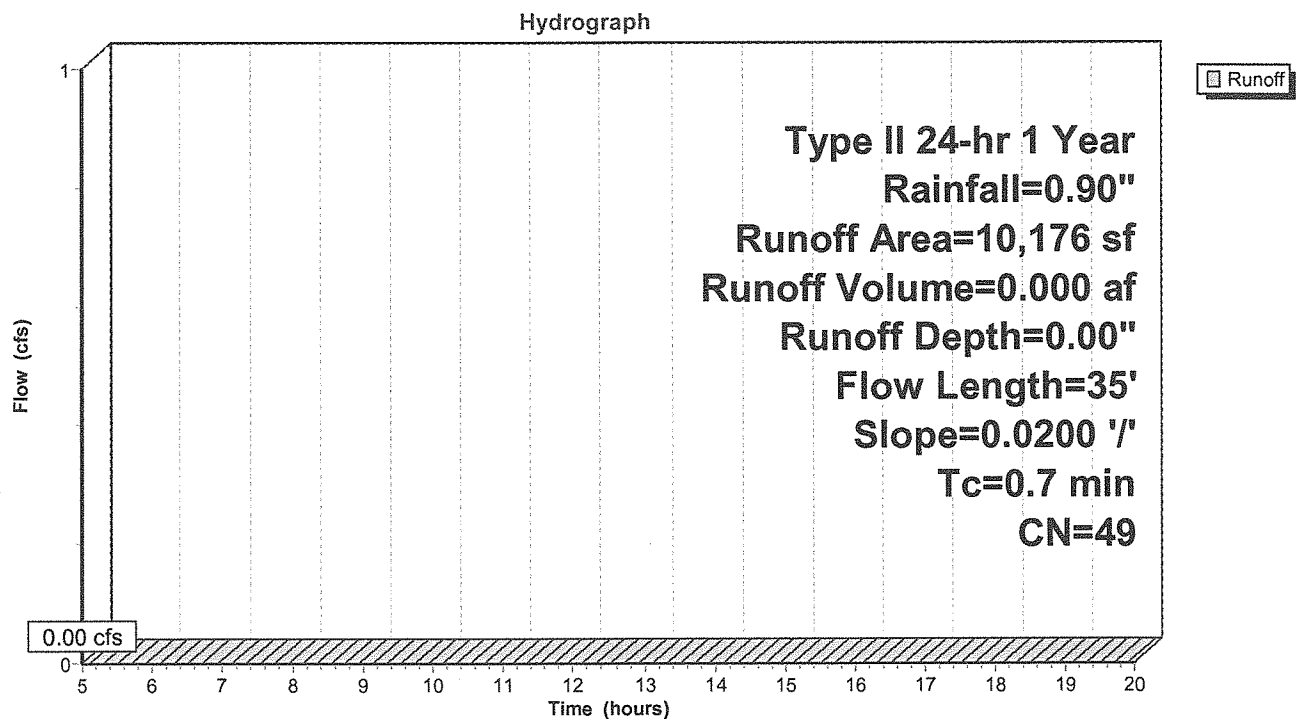
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Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 Year Rainfall=0.90"

Area (sf)	CN	Description
10,176	49	50-75% Grass cover, Fair, HSG A
10,176		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	15	0.0200	0.99		Shallow Concentrated Flow, Shallow Conc-grass
0.4	20	0.0200	0.81		Short Grass Pasture Kv= 7.0 fps
					Sheet Flow, Sheet flow-pavement
					Smooth surfaces n= 0.011 P2= 2.10"
0.7	35	Total			

Subcatchment 1S: Existing - Grass



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3 and 13 George St Existing-Split

JAN 20 2013 Type II 24-hr 1 Year Rainfall=0.90"

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Subcatchment 2S: Existing Half Impervious

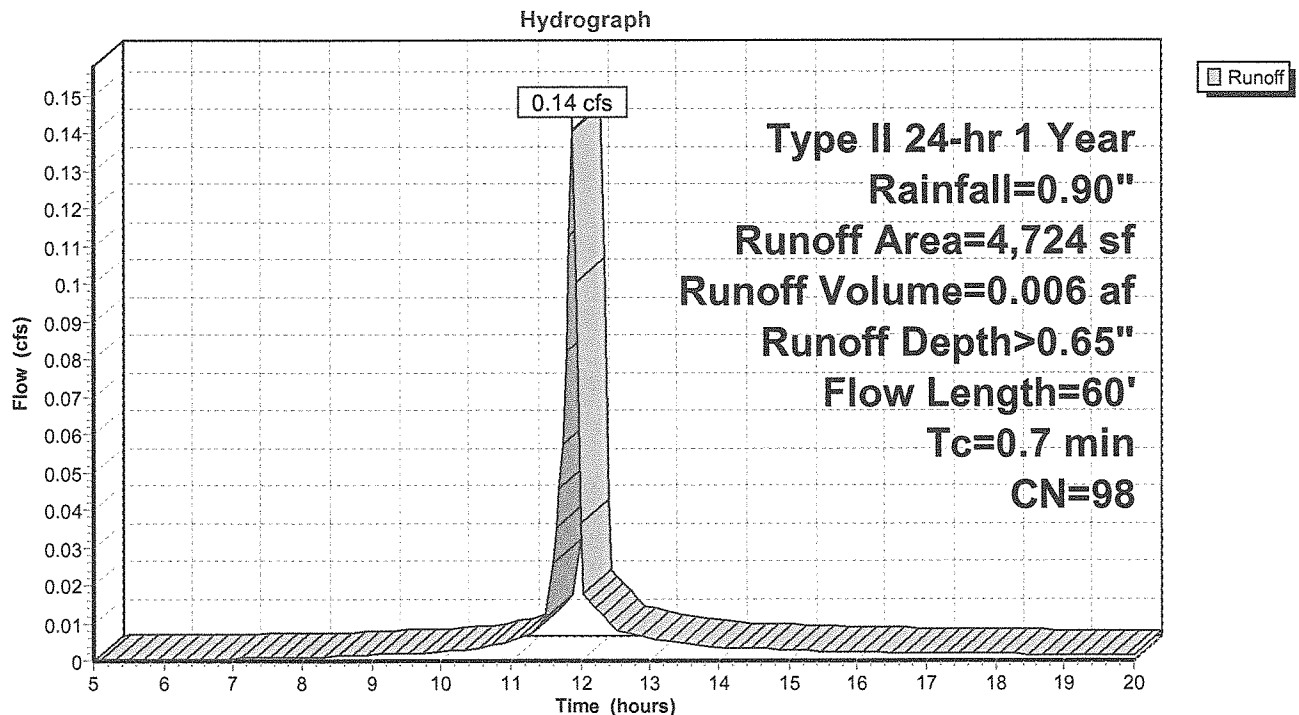
Runoff = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af, Depth> 0.65"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 Year Rainfall=0.90"

Area (sf)	CN	Description
4,724	98	Paved parking & roofs
4,724		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.2500	2.22		Sheet Flow, Sheet Flow-roof Smooth surfaces n= 0.011 P2= 2.10"
0.1	15	0.0200	2.87		Shallow Concentrated Flow, Shallow Conc-pavement Paved Kv= 20.3 fps
0.4	25	0.0200	0.99		Shallow Concentrated Flow, Shallow conc-grass Short Grass Pasture Kv= 7.0 fps
0.7	60	Total			

Subcatchment 2S: Existing Half Impervious



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3 and 13 George St Existing-Split

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Type II 24-hr 1 Year Rainfall=0.90"

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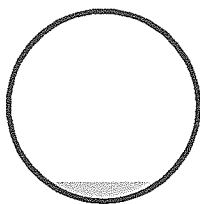
Reach 3R: 12" Storm Pipe

Inflow Area = 0.342 ac, Inflow Depth > 0.21" for 1 Year event
 Inflow = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af
 Outflow = 0.13 cfs @ 11.90 hrs, Volume= 0.006 af, Atten= 5%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 3.16 fps, Min. Travel Time= 0.4 min
 Avg. Velocity = 0.97 fps, Avg. Travel Time= 1.4 min

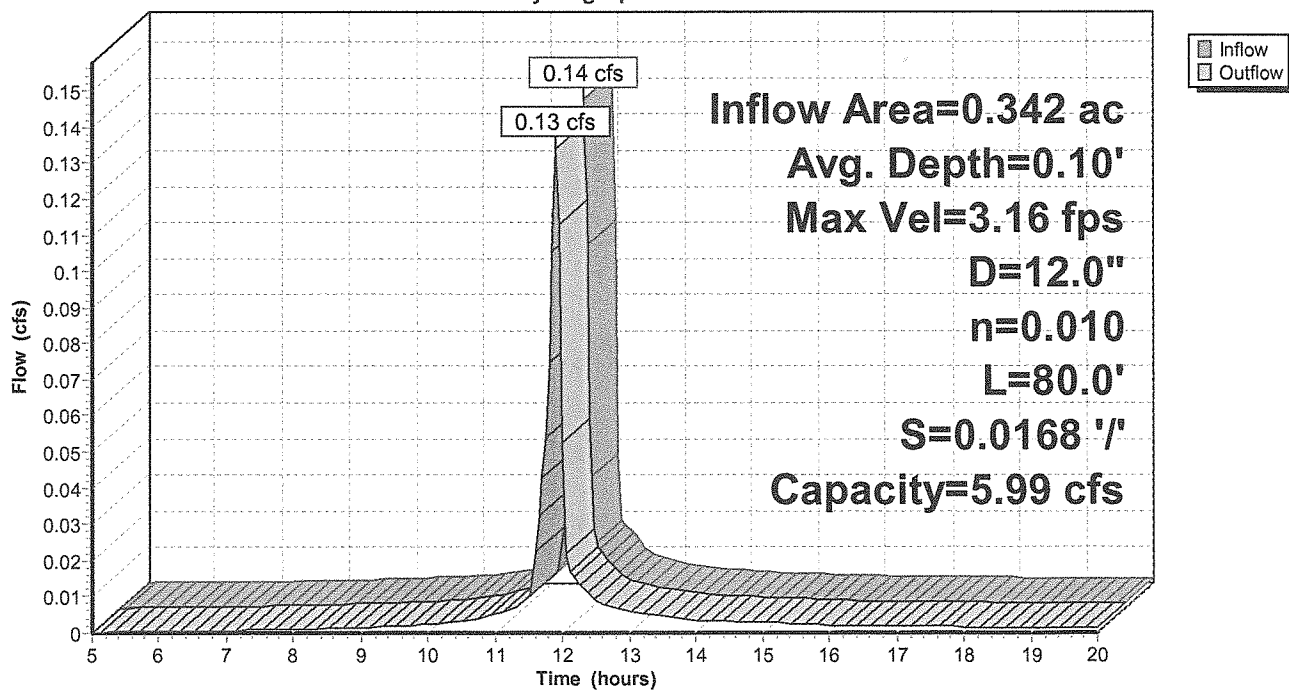
Peak Storage= 3 cf @ 11.90 hrs, Average Depth at Peak Storage= 0.10'
 Bank-Full Depth= 1.00', Capacity at Bank-Full= 5.99 cfs

12.0" Diameter Pipe, n= 0.010 PVC, smooth interior
 Length= 80.0' Slope= 0.0168 '/'
 Inlet Invert= 212.60', Outlet Invert= 211.26'



Reach 3R: 12" Storm Pipe

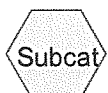
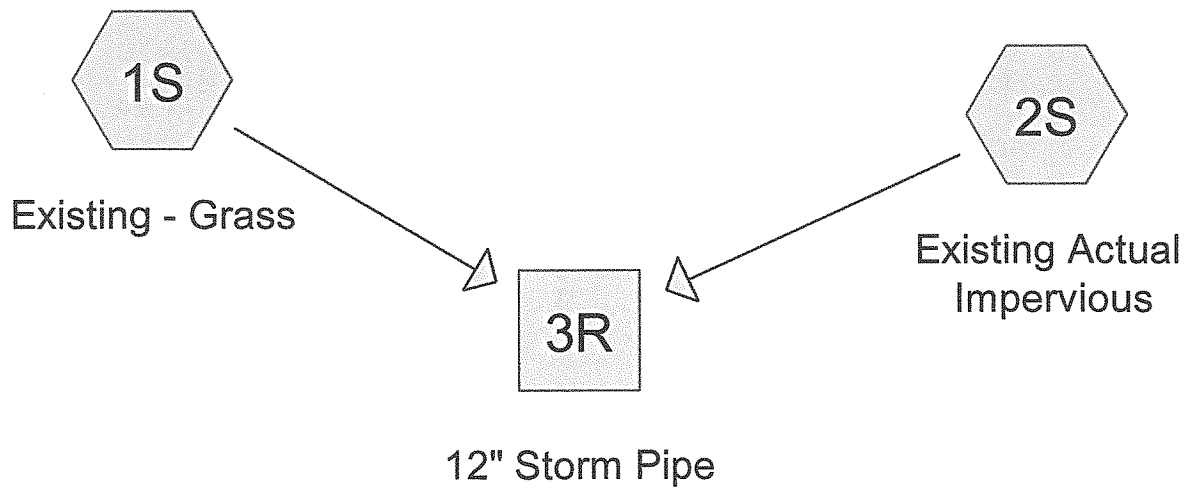
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Drainage Diagram for 3 and 13 George St Existing-Split 10 year
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3 and 13 George St Existing-Split 10 year

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Type II 24-hr 10 Year Rainfall=3.20"

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Subcatchment 1S: Existing - Grass

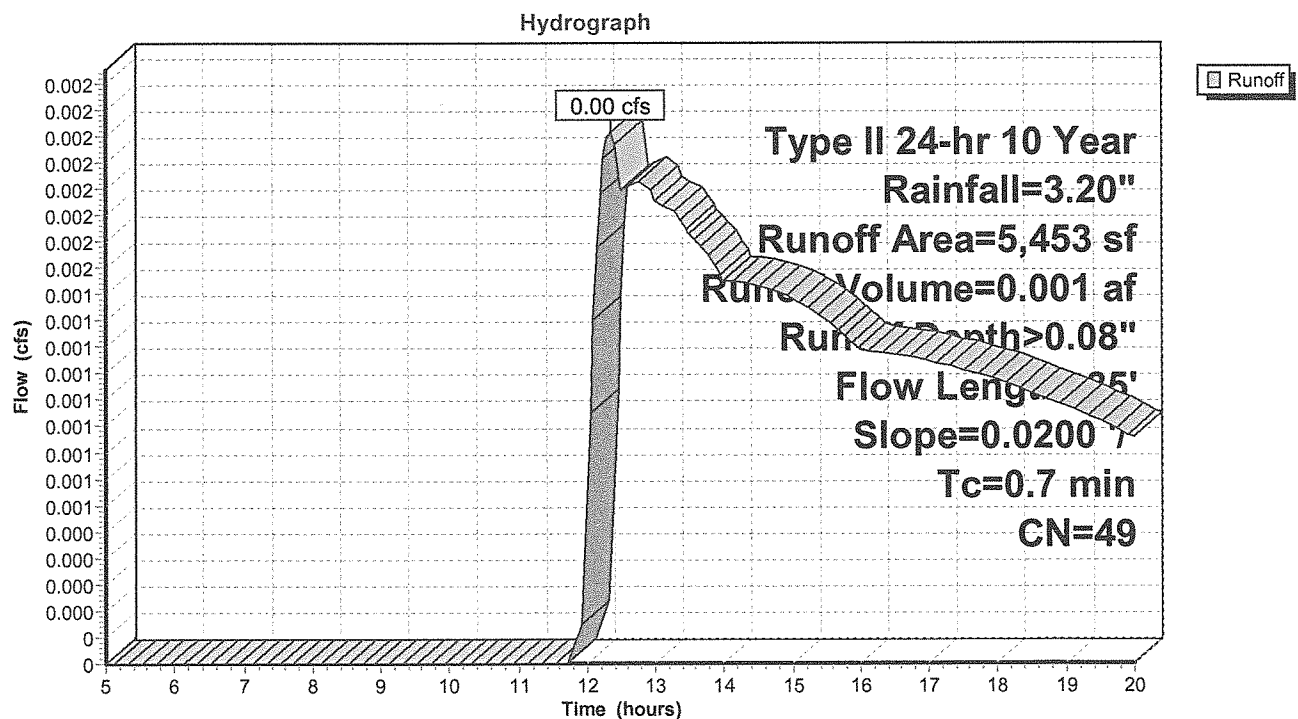
Runoff = 0.00 cfs @ 12.34 hrs, Volume= 0.001 af, Depth> 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 Year Rainfall=3.20"

Area (sf)	CN	Description
5,453	49	50-75% Grass cover, Fair, HSG A
5,453		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	15	0.0200	0.99		Shallow Concentrated Flow, Shallow Conc-grass
0.4	20	0.0200	0.81		Short Grass Pasture Kv= 7.0 fps
					Sheet Flow, Sheet flow-pavement
					Smooth surfaces n= 0.011 P2= 2.10"
0.7	35	Total			

Subcatchment 1S: Existing - Grass



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3 and 13 George St Existing-Split 10 year

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Type II 24-hr 10 Year Rainfall=3.20"

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Subcatchment 2S: Existing Actual Impervious

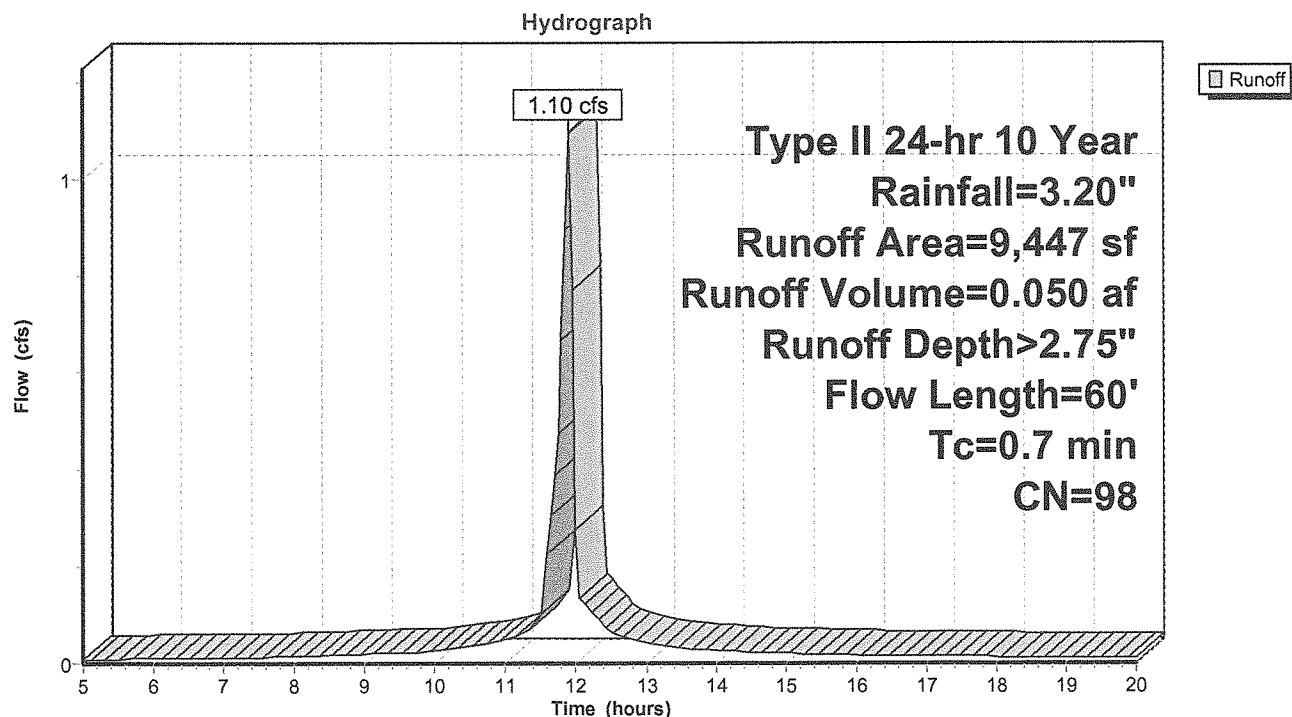
Runoff = 1.10 cfs @ 11.89 hrs, Volume= 0.050 af, Depth> 2.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 Year Rainfall=3.20"

Area (sf)	CN	Description
9,447	98	Paved parking & roofs
9,447		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.2500	2.22		Sheet Flow, Sheet Flow-roof Smooth surfaces n= 0.011 P2= 2.10"
0.1	15	0.0200	2.87		Shallow Concentrated Flow, Shallow Conc-pavement Paved Kv= 20.3 fps
0.4	25	0.0200	0.99		Shallow Concentrated Flow, Shallow conc-grass Short Grass Pasture Kv= 7.0 fps
0.7	60	Total			

Subcatchment 2S: Existing Actual Impervious



3 and 13 George St Existing-Split 10 year

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Type II 24-hr 10 Year Rainfall=3.20"

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Reach 3R: 12" Storm Pipe

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Inflow Area = 0.342 ac, Inflow Depth > 1.77" for 10 Year event
Inflow = 1.10 cfs @ 11.89 hrs, Volume= 0.050 af
Outflow = 1.07 cfs @ 11.90 hrs, Volume= 0.050 af, Atten= 3%, Lag= 0.2 min

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Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Max. Velocity= 5.79 fps, Min. Travel Time= 0.2 min

Avg. Velocity = 1.87 fps, Avg. Travel Time= 0.7 min

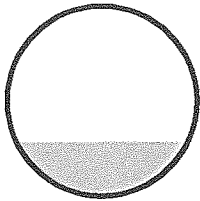
Peak Storage= 15 cf @ 11.90 hrs, Average Depth at Peak Storage= 0.29'

Bank-Full Depth= 1.00', Capacity at Bank-Full= 5.99 cfs

12.0" Diameter Pipe, n= 0.010 PVC, smooth interior

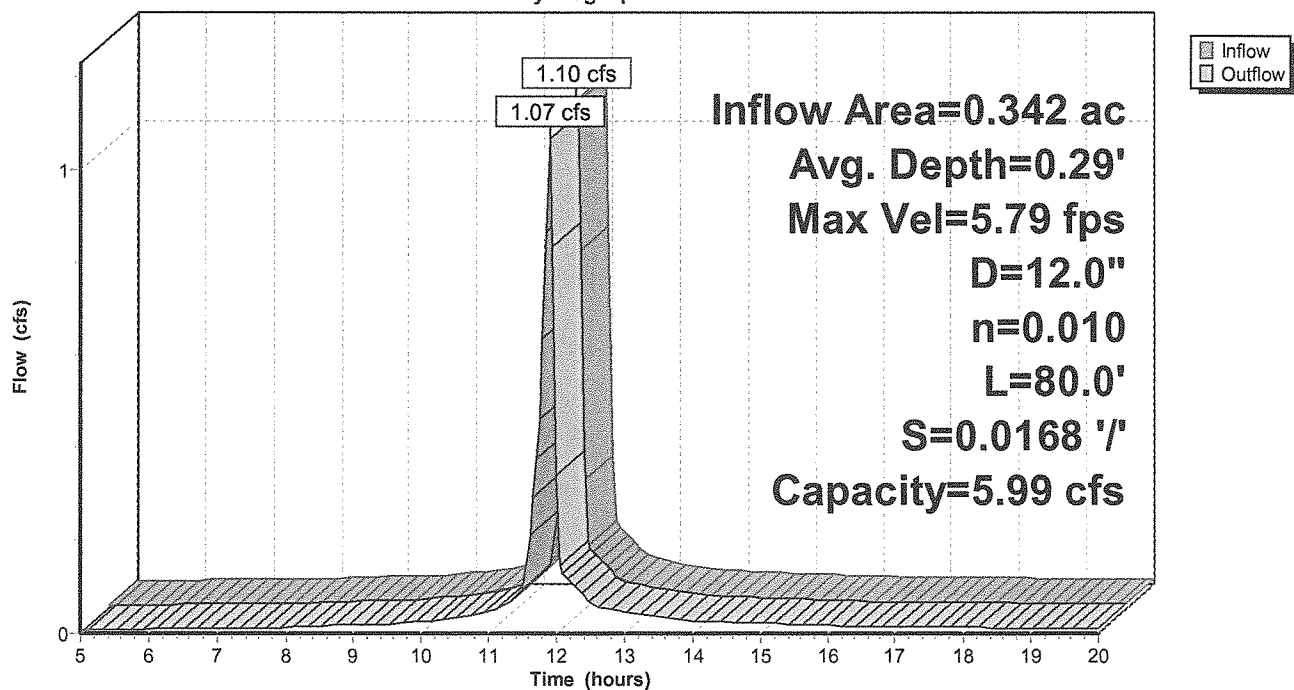
Length= 80.0' Slope= 0.0168 '/'

Inlet Invert= 212.60', Outlet Invert= 211.26'



Reach 3R: 12" Storm Pipe

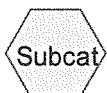
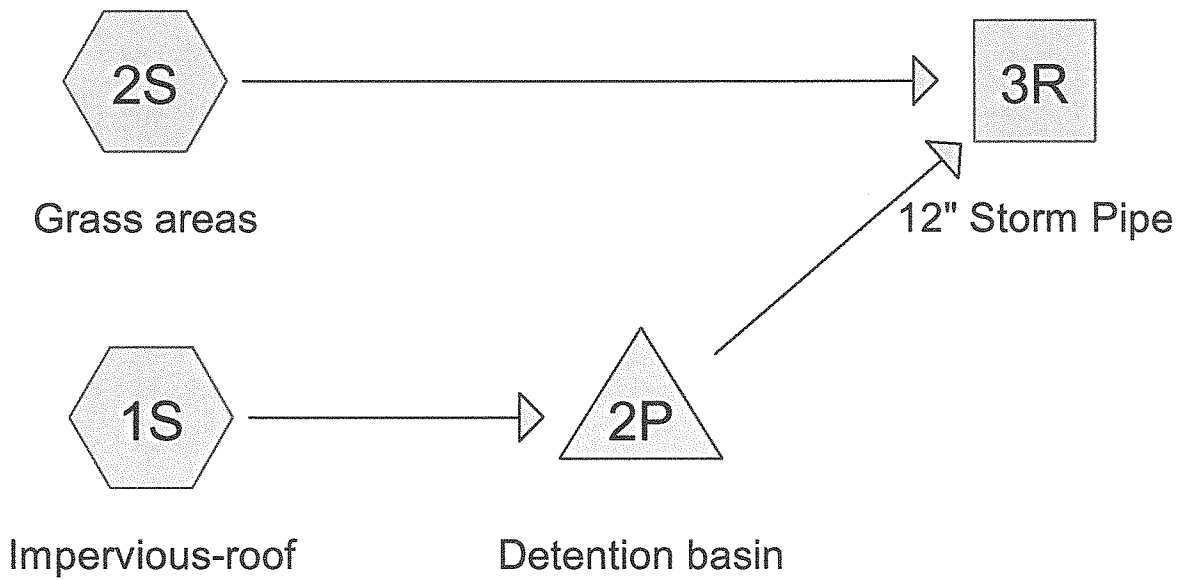
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Drainage Diagram for 3 and 13 George St Proposed-Split_revised
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Subcatchment 1S: Impervious-roof

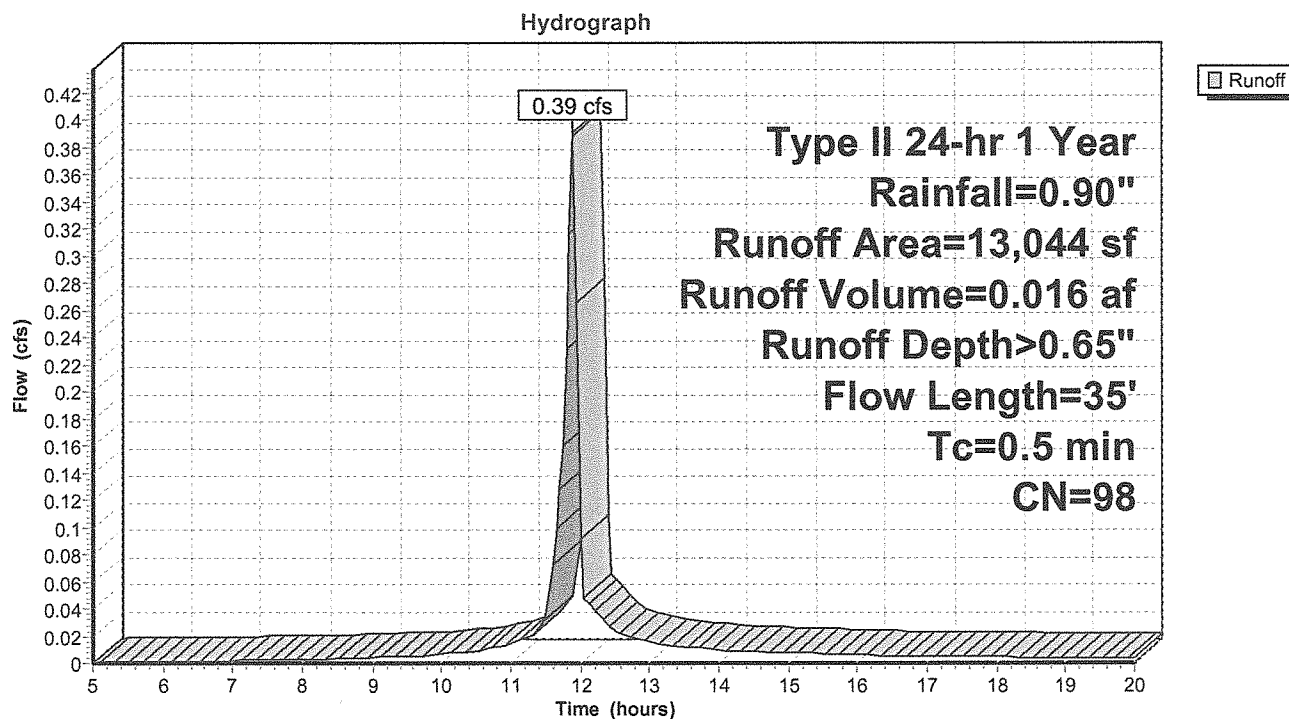
Runoff = 0.39 cfs @ 11.89 hrs, Volume= 0.016 af, Depth> 0.65"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 Year Rainfall=0.90"

Area (sf)	CN	Description
13,044	98	Paved parking & roofs
13,044		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.2500	2.22		Sheet Flow, Sheet Flow-roof
					Smooth surfaces n= 0.011 P2= 2.10"
0.3	15	0.0200	0.99		Shallow Concentrated Flow, Shallow Conc-grass
					Short Grass Pasture Kv= 7.0 fps
0.5	35	Total			

Subcatchment 1S: Impervious-roof



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Type II 24-hr 1 Year Rainfall=0.90"

Page 2

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Subcatchment 2S: Grass areas

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

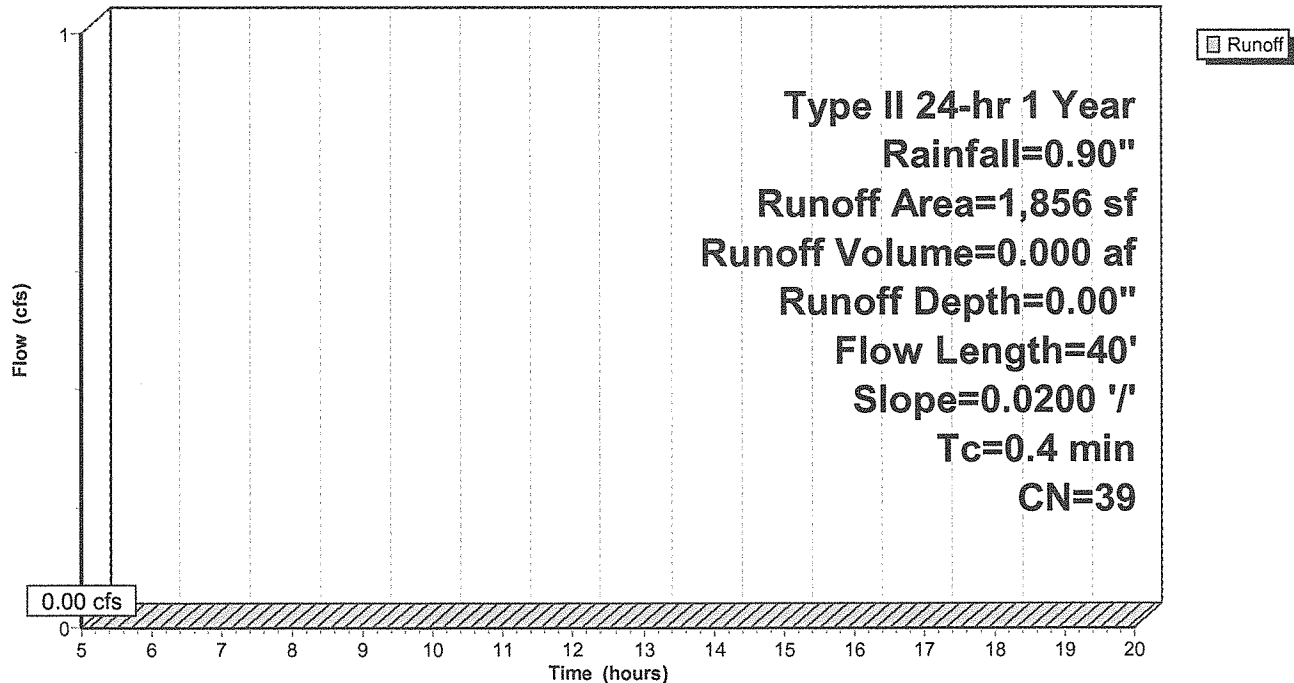
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 Year Rainfall=0.90"

Area (sf)	CN	Description
1,856	39	>75% Grass cover, Good, HSG A
1,856		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	15	0.0200	0.99		Shallow Concentrated Flow, Shallow Conc-grass
					Short Grass Pasture Kv= 7.0 fps
0.1	25	0.0200	2.87		Shallow Concentrated Flow, Shallow conc-pavement
					Paved Kv= 20.3 fps
0.4	40	Total			

Subcatchment 2S: Grass areas

Hydrograph



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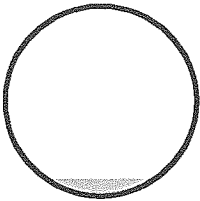
Reach 3R: 12" Storm Pipe

Inflow Area = 0.342 ac, Inflow Depth > 0.56" for 1 Year event
Inflow = 0.11 cfs @ 12.01 hrs, Volume= 0.016 af
Outflow = 0.11 cfs @ 12.02 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.95 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.30 fps, Avg. Travel Time= 1.0 min

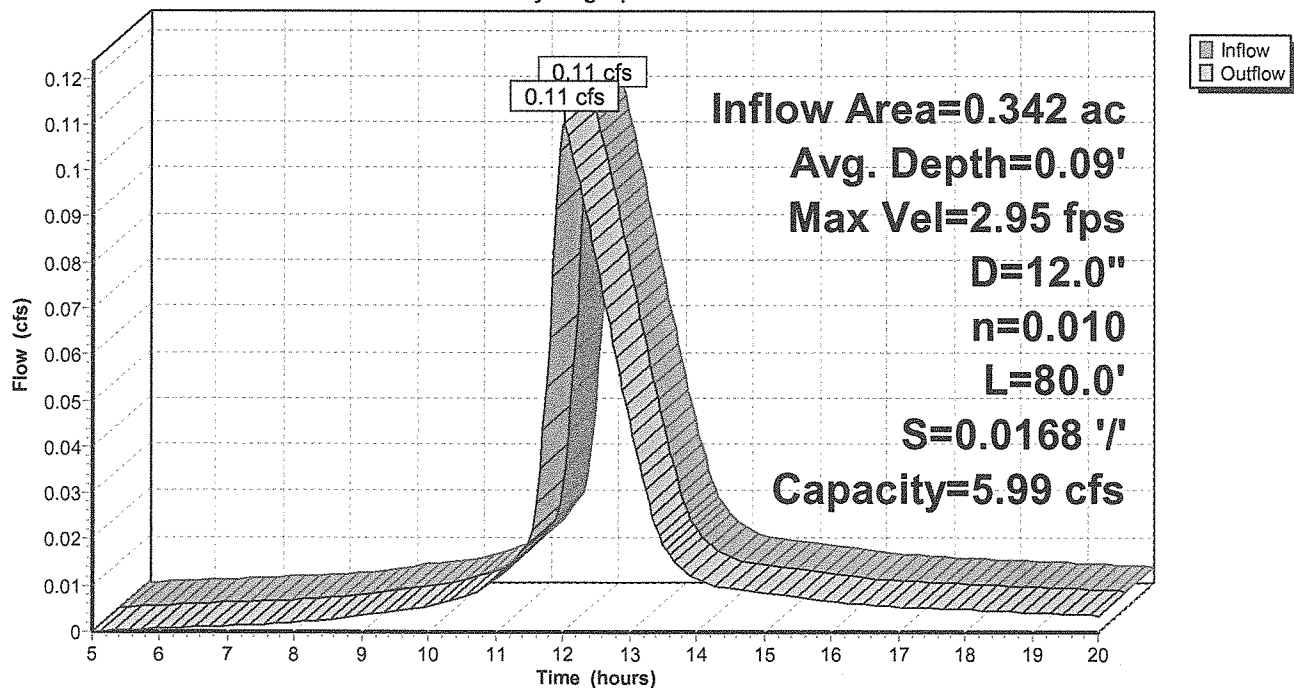
Peak Storage= 3 cf @ 12.01 hrs, Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 1.00', Capacity at Bank-Full= 5.99 cfs

12.0" Diameter Pipe, n= 0.010 PVC, smooth interior
Length= 80.0' Slope= 0.0168 '/'
Inlet Invert= 212.60', Outlet Invert= 211.26'



Reach 3R: 12" Storm Pipe

Hydrograph



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JAN 20 2013 Type II 24-hr 1 Year Rainfall=0.90"

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Pond 2P: Detention basin

Inflow Area = 0.299 ac, Inflow Depth > 0.65" for 1 Year event
 Inflow = 0.39 cfs @ 11.89 hrs, Volume= 0.016 af
 Outflow = 0.11 cfs @ 12.01 hrs, Volume= 0.016 af, Atten= 72%, Lag= 6.8 min
 Primary = 0.11 cfs @ 12.01 hrs, Volume= 0.016 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 214.69' @ 12.01 hrs Surf.Area= 196 sf Storage= 233 cf

Plug-Flow detention time= 27.9 min calculated for 0.016 af (99% of inflow)
 Center-of-Mass det. time= 22.5 min (772.5 - 750.0)

Volume	Invert	Avail.Storage	Storage Description
#1	213.50'	784 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
213.50	196	0	0
217.50	196	784	784

Device	Routing	Invert	Outlet Devices
#1	Primary	213.50'	2.0" Vert. Orifice/Grate C= 0.600
#2	Primary	215.00'	4.0" Vert. 10 Year C= 0.600

Primary OutFlow Max=0.11 cfs @ 12.01 hrs HW=214.68' (Free Discharge)
 1=Orifice/Grate (Orifice Controls 0.11 cfs @ 5.05 fps)
 2=10 Year (Controls 0.00 cfs)

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Type II 24-hr 1 Year Rainfall=0.90"

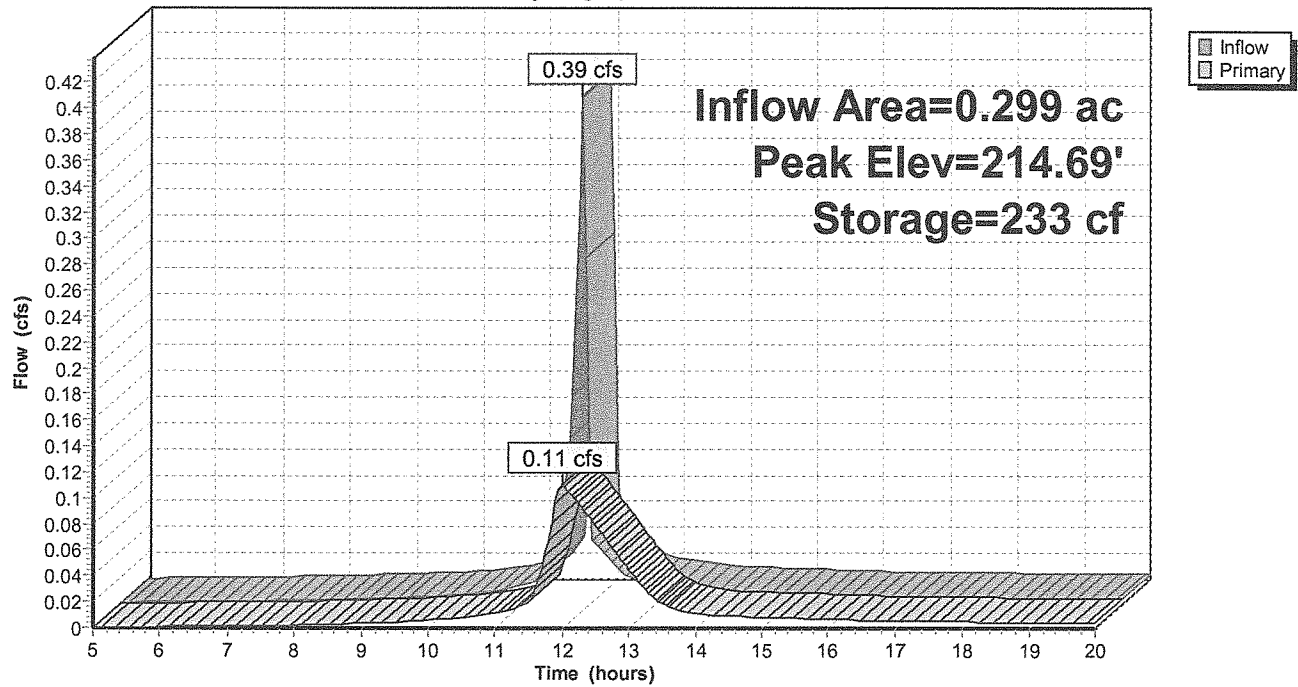
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Pond 2P: Detention basin

Hydrograph



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Type II 24-hr 10 Year Rainfall=3.20"

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Subcatchment 1S: Impervious-roof

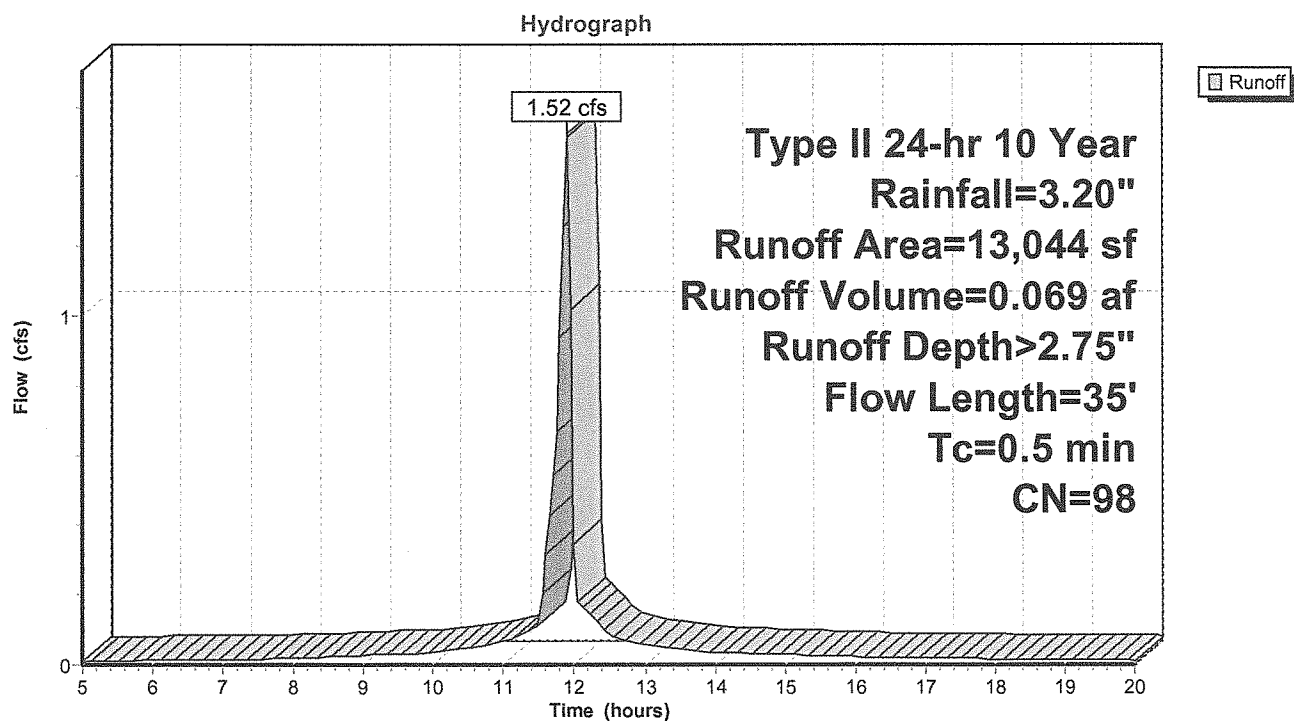
Runoff = 1.52 cfs @ 11.89 hrs, Volume= 0.069 af, Depth> 2.75'

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 Year Rainfall=3.20"

Area (sf)	CN	Description
13,044	98	Paved parking & roofs
13,044		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.2500	2.22		Sheet Flow, Sheet Flow-roof
					Smooth surfaces n= 0.011 P2= 2.10"
0.3	15	0.0200	0.99		Shallow Concentrated Flow, Shallow Conc-grass
					Short Grass Pasture Kv= 7.0 fps
0.5	35	Total			

Subcatchment 1S: Impervious-roof



3 and 13 George St Proposed-Split_revised

Type II 24-hr 10 Year Rainfall=3.20"

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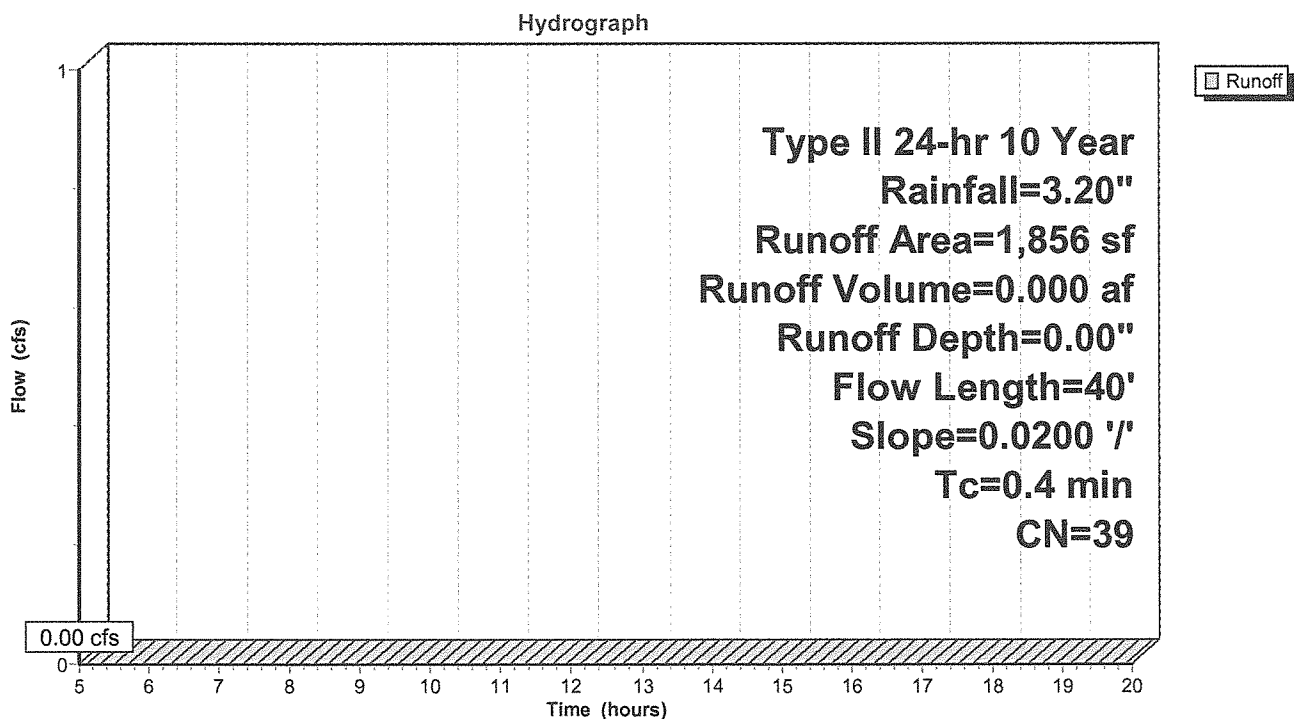
Subcatchment 2S: Grass areas

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt=0.05 hrs
Type II 24-hr 10 Year Rainfall=3.20"

Area (sf)	CN	Description
1,856	39	>75% Grass cover, Good, HSG A
1,856		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	15	0.0200	0.99		Shallow Concentrated Flow, Shallow Conc-grass
					Short Grass Pasture Kv= 7.0 fps
0.1	25	0.0200	2.87		Shallow Concentrated Flow, Shallow conc-pavement
					Paved Kv= 20.3 fps
0.4	40	Total			

Subcatchment 2S: Grass areas

3 and 13 George St Proposed-Split_revised

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Type II 24-hr 10 Year Rainfall=3.20"

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JAN 26 2013

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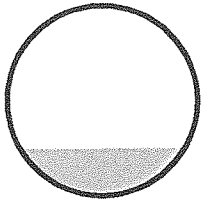
Reach 3R: 12" Storm Pipe

Inflow Area = 0.342 ac, Inflow Depth > 2.39" for 10 Year event
Inflow = 0.82 cfs @ 11.97 hrs, Volume= 0.068 af
Outflow = 0.82 cfs @ 11.97 hrs, Volume= 0.068 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.34 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.06 fps, Avg. Travel Time= 0.6 min

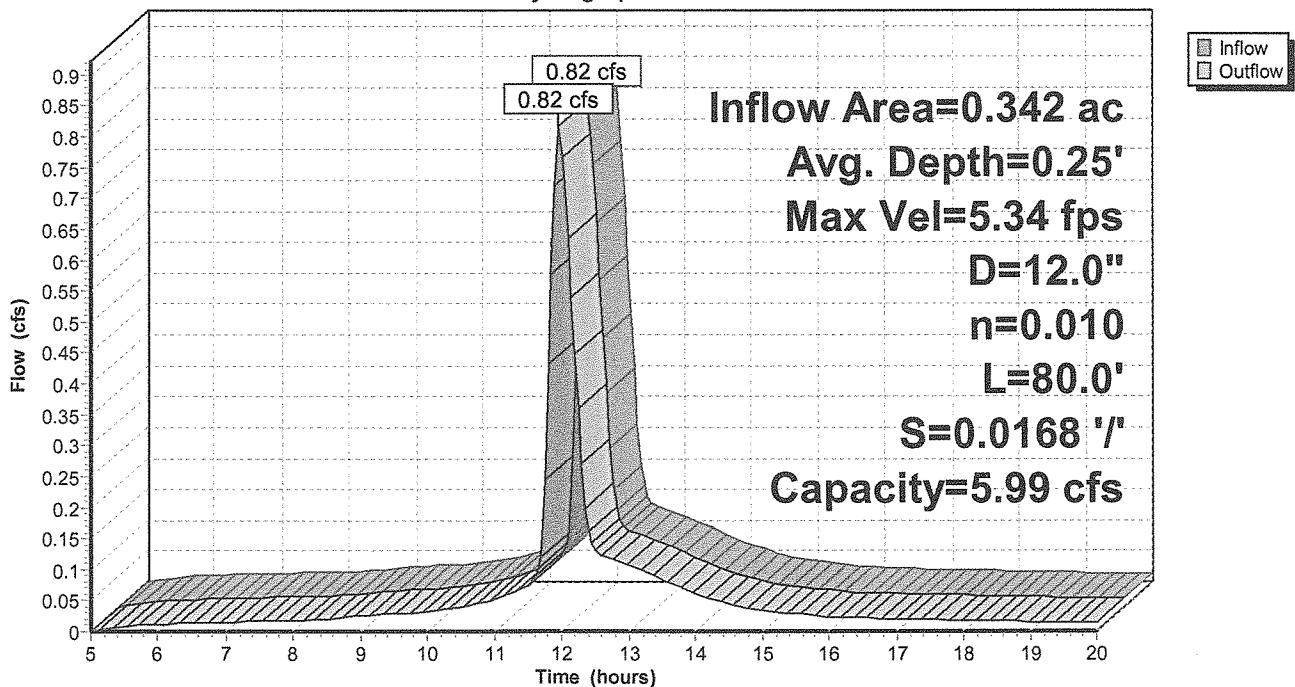
Peak Storage= 12 cf @ 11.97 hrs, Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 1.00', Capacity at Bank-Full= 5.99 cfs

12.0" Diameter Pipe, n= 0.010 PVC, smooth interior
Length= 80.0' Slope= 0.0168 '/
Inlet Invert= 212.60', Outlet Invert= 211.26'



Reach 3R: 12" Storm Pipe

Hydrograph



3 and 13 George St Proposed-Split_revised

Type II 24-hr 10 Year Rainfall=3.20"

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1/26/2013

Pond 2P: Detention basin

Inflow Area = 0.299 ac, Inflow Depth > 2.75" for 10 Year event

Inflow = 1.52 cfs @ 11.89 hrs, Volume= 0.069 af

Outflow = 0.82 cfs @ 11.97 hrs, Volume= 0.068 af, Atten= 46% / Lag= 4.4 min

Primary = 0.82 cfs @ 11.97 hrs, Volume= 0.068 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 217.34' @ 11.96 hrs Surf.Area= 196 sf Storage= 753 cf

Plug-Flow detention time= 21.4 min calculated for 0.068 af (99% of inflow)

Center-of-Mass det. time= 18.3 min (747.5 - 729.2)

Volume	Invert	Avail.Storage	Storage Description
#1	213.50'	784 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
213.50	196	0	0
217.50	196	784	784

Device	Routing	Invert	Outlet Devices
#1	Primary	213.50'	2.0" Vert. Orifice/Grate C= 0.600
#2	Primary	215.00'	4.0" Vert. 10 Year C= 0.600

Primary OutFlow Max=0.81 cfs @ 11.97 hrs HW=217.28' (Free Discharge)

1=Orifice/Grate (Orifice Controls 0.20 cfs @ 9.26 fps)

2=10 Year (Orifice Controls 0.61 cfs @ 7.00 fps)

3 and 13 George St Proposed-Split_revised

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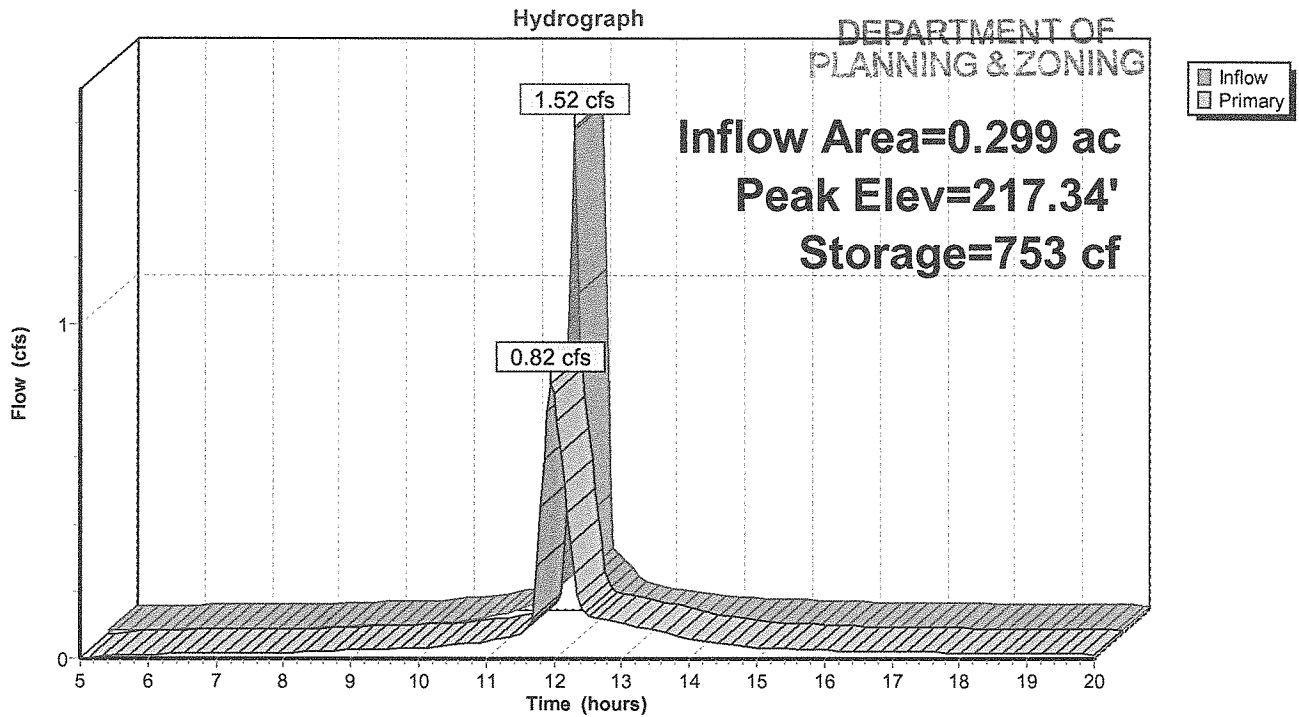
Type II 24-hr 10 Year Rainfall=3.20"

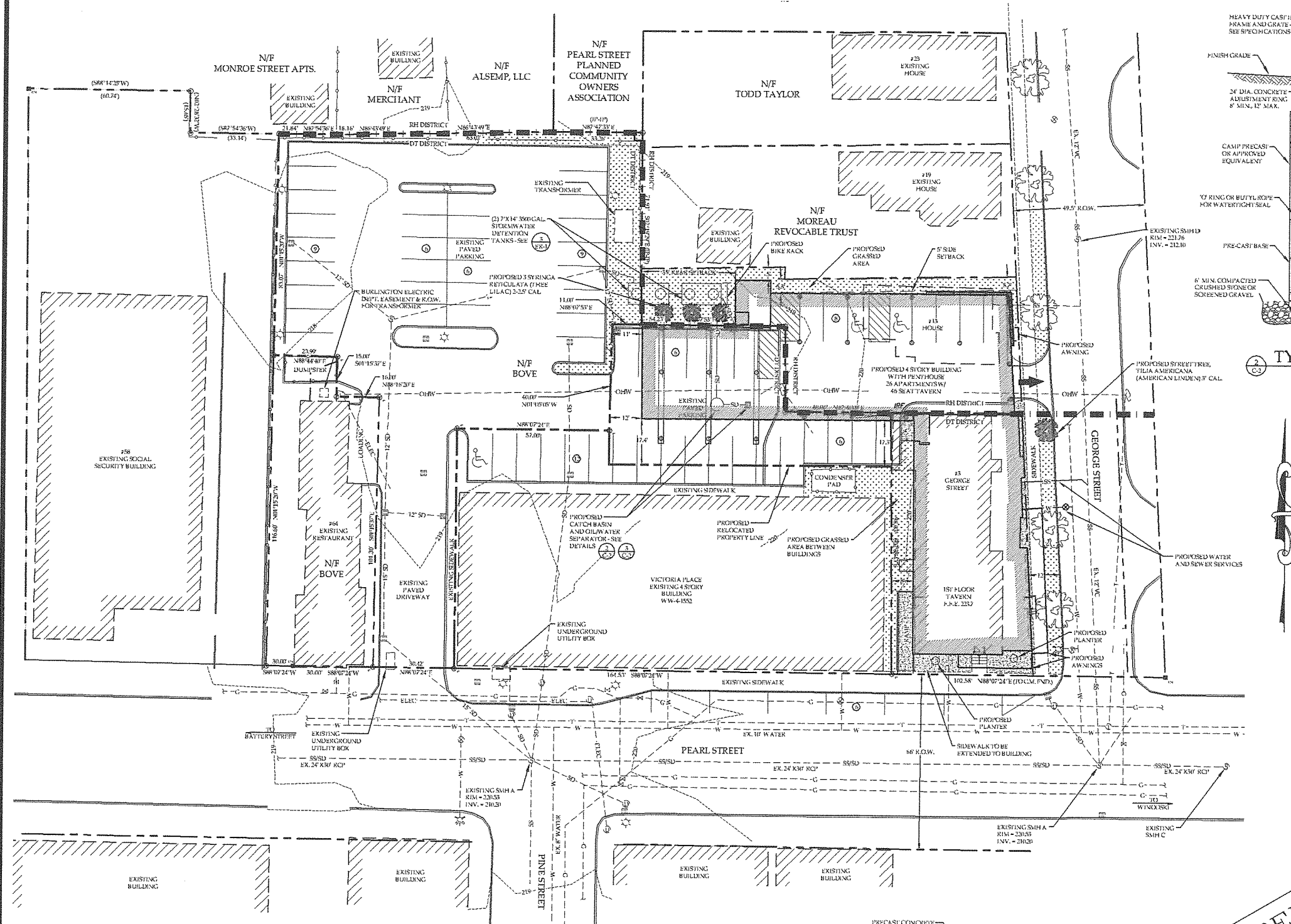
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Pond 2P: Detention basin JAN 20 2013





PRELIMINARY
NOT FOR CONSTRUCTION
DATE: 01/28/13

PLAN REFERENCES

1) LAND TITLE SURVEY FOR RICHARD J. BOVE/THINE S. BOVE/ PEARL STREET BURLINGTON, VERMONT, LATEST DATE: FEBRUARY 26, 2003, SCALE: 1"=30', PROJECT NO. 2182, PREPARED BY VERNON LAND SURVEYORS, INC. OF SOUTH BURLINGTON, VT.

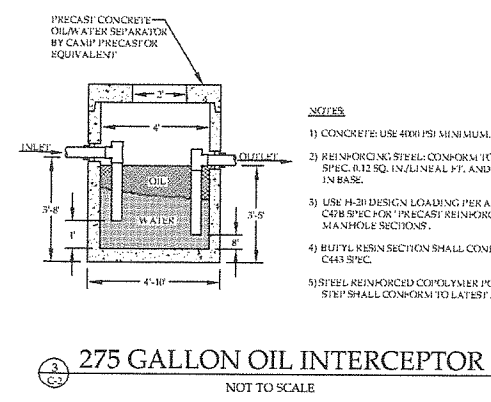
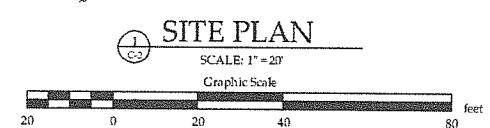
NOTES

1) THIS DRAWING IS NOT A BOUNDARY SURVEY PLAT. BOUNDARY LINE INFORMATION SHOWN IS BASED ON PLAN REFERENCE #1. THE PROPERTY LINES, EASEMENTS AND OTHER REAL PROPERTY DESCRIPTIONS PROVIDED ON THIS DRAWING ARE FOR ILLUSTRATION PURPOSES ONLY. THEY DO NOT DEFINE LEGAL RIGHTS OR MEET LEGAL REQUIREMENTS FOR A LAND SURVEY AS DESCRIBED IN 6A & TITLE 27, SECTION 665 AND SHALL NOT BE USED IN LIEU OF A SURVEY AS THE BASIS FOR ANY LAND TRANSFER OR ESTABLISHMENT OF ANY PROPERTY RIGHT.

NOTES CONT.

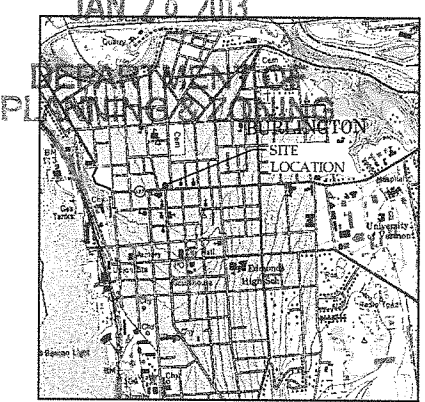
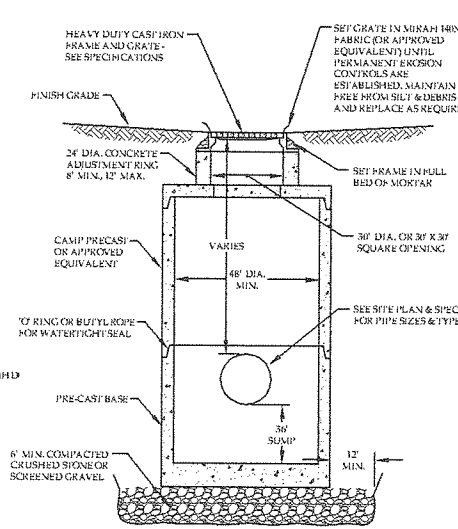
2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES OR UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION. APPROPRIATE REMEDIAL ACTION SHALL BE TAKEN BEFORE PROCEEDING WITH THE WORK.

3) THIS TOPOGRAPHIC SURVEY WAS CONDUCTED WITHOUT THE BENEFIT OF "DIG SAFE" MARKINGS. UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND ARE NOT ASSURED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT "DIG SAFE" BEFORE COMMENCING ANY WORK AND SHALL PRESERVE ALL EXISTING UTILITIES NOT SCHEDULED TO BE REMOVED OR ABANDONED AS PART OF THE PROJECT.



- NOTES**
- 1) CONCRETE: USE 4000 PSI MINIMUM.
 - 2) REINFORCING STEEL: CONFORM TO LATEST ASTM A185 SPEC. #32 SQ. IN. LINEAL FT. AND #42 SQ. IN. BOTH WAYS IN BASE.
 - 3) USE H-30 DESIGN LOADING PER AASHTO H-30-44; ASTM C493 SPEC. FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS.
 - 4) BUTYL RUBBER SECTION SHALL CONFORM TO LATEST ASTM C443 SPEC.
 - 5) STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC STEEL SHALL CONFORM TO LATEST ASTM C493 SPEC.

TYPICAL CATCH BASIN
NOT TO SCALE



LEGEND

N/F	NOW OR FORMERLY OWNED BY EXISTING CONCRETE MONUMENT BRASS TABLET SET
1"	IRON PIPE SET
1"	IRON PIPE FOUND
1"	EXISTING CATCH BASIN
1"	EXISTING WATER VALVE
1"	EXISTING GAS VALVE
1"	EXISTING UTILITY POLE & GUY WIRE
1"	EXISTING HYDRANT
1"	EXISTING SEWER MANHOLE
1"	PROPOSED LIGHT POLE
1"	EXISTING TREE
1"	PROPOSED TREE
1"	EXISTING PROPERTY LINE
1"	PROPOSED PROPERTY LINE
1"	EXISTING ZONING BOUNDARY
1"	RIGHT OF WAY / EASEMENT
1"	EXISTING CHAIN LINK FENCE
1"	EXISTING CONDUIT
1"	EXISTING WATER LINE
1"	EXISTING SEWER LINE
1"	EXISTING SEWER / STORM LINE
1"	EXISTING STORM WATER URN
1"	EXISTING GAS LINE
1"	EXISTING OVERHEAD WIRES
1"	EXISTING UNDERGROUND ELECTRIC WIRES
1"	EXISTING UNDERGROUND TELEPHONE WIRES

- NOTES**
- 1) PURPOSE OF PLAN: TO CONSTRUCT A MIXED USE BUILDING WITH 26 RESIDENTIAL APARTMENTS AND A 46 SEAT TAVERN.
 - 2) PRESENT ZONING: DOWNTOWN TRANSITION (DT), HIGH DENSITY RESIDENTIAL (RH).
 - 3) SETBACKS:
DT DISTRICT: 5' SIDE OR 10% OF LOT WIDTH
RH DISTRICT: 5' SIDE OR 10% OF LOT WIDTH
5' REAR OR 55% OF LOT DEPTH
FRONT AVG. OF ADJ. LOTS
 - 4) PARKING REQUIREMENTS:
DT DISTRICT: 1 SPACE PER RESIDENTIAL UNIT
RH DISTRICT: 1 SPACE PER UNIT
NO PARKING REQUIRED FOR BAR/TAVERN OR CAFE IN DT DISTRICT
PROVIDED - 14 SPACES
REQUESTED WAIVER FOR A RATIO OF 0.55 SPACES PER UNIT
PARKING WILL BE SHARED WITH THE ADJACENT VICTORIA PLACE
DEVELOPMENT, AND THE PROJECT IS LOCATED IN AN AREA WHERE
PUBLIC TRANSPORTATION IS READILY AVAILABLE.
 - 5) LOT COVERAGE: MAX. ALLOWED - 100% IN DT DISTRICT
80% IN RH DISTRICT
PROPOSED - 93% IN DT DISTRICT
75% IN RH DISTRICT
 - 6) SITE TO BE SERVICED BY MUNICIPAL WATER AND SEWER
 - 7) OWNER OF RECORD: S. GEORGE STREET, LLC
C/O RICHARD BOVE
218 OYLAKE DRIVE
COLCHESTER, VT 05446
 - 8) SITE SPECIFIC EROSION PREVENTION AND SEDIMENT CONTROL SHALL BE UTILIZED IN ACCORDANCE WITH THE CITY OF BURLINGTON STORM WATER & EROSION CONTROL SPECIFICATIONS, STANDARDS & MANAGEMENT PRACTICES DESIGN MANUAL. MEASURES SHALL INCLUDE A STABILIZED CONSTRUCTION ENTRANCE, WORK AREA DEMARCATION FENCING, SILT FENCE AT THE BASE OF SLOPES AND AROUND SOLID STRUCTURES, SEEDING AND MULCHING OF DISTURBED AREAS NOT TO RECEIVE A PERMANENT IMPERVIOUS SURFACE, AND SWEEPING OF EXISTING PAVED AREAS AS REQUIRED TO PREVENT SILT, SEDIMENT OR OTHER POLLUTANTS FROM LEAVING THE SITE OR ENTERING THE CITY'S STORM WATER SYSTEM.

REVISION: 01-28-13 ADDED CATCH BASIN AND OIL/WATER SEPARATOR DETAILS, ADDED SECOND STORM WATER DETENTION TANK, CATCH BASIN, AND OIL/WATER SEPARATOR

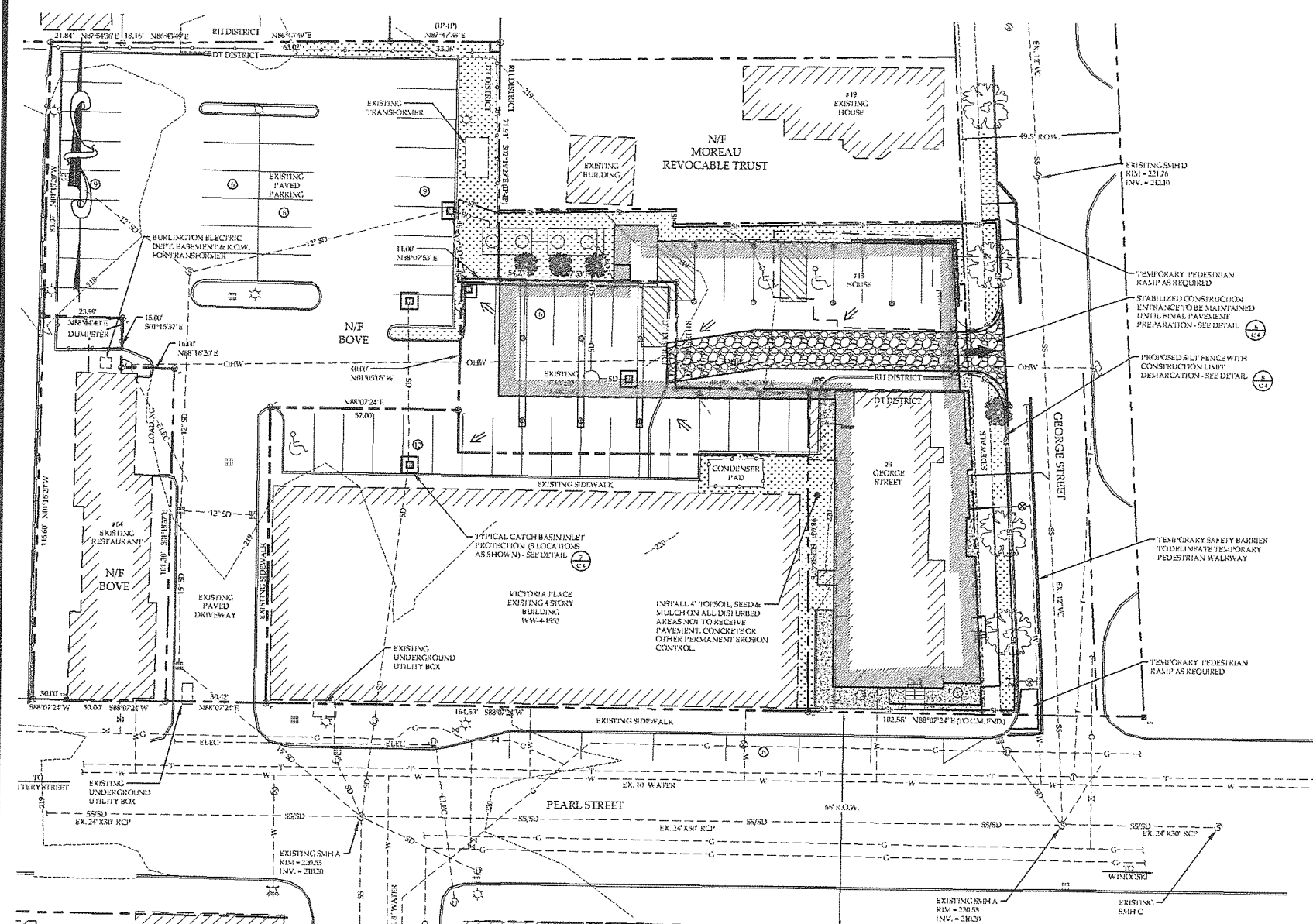
PROPOSED SITE PLAN
RICHARD BOVE - GEORGE STREET LOFTS
3 & 13 GEORGE STREET
BURLINGTON, VERMONT

RUGGIANO Engineering, inc.
5 LAKE STREET
ST. ALBANS, VERMONT 05478
PHONE - (802) 524-9900 FAX - (802) 524-9700
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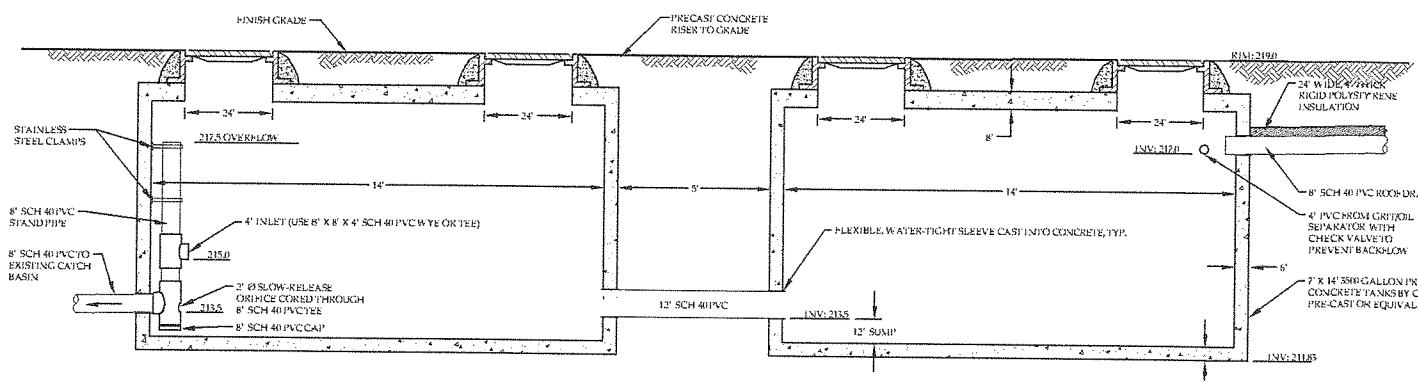
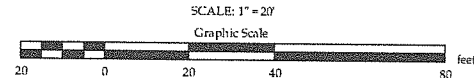
PROJECT NO. 12053
DRAWN BY: JGE
CHECKED BY: CRC
SCALE: 1"=20'
DATE: 01/21/13

SHEET NO.
C-2
2 OF 4 SHEETS

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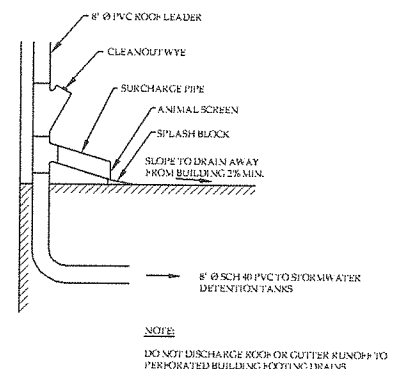


EROSION PREVENTION & SEDIMENT CONTROL PLAN



STORMWATER DETENTION TANKS

NOT TO SCALE



TYPICAL ROOF DRAIN SURCHARGE

NOT TO SCALE

- EROSION CONTROL NOTES:**
1. THIS PROJECT IS CLASSIFIED AS A LOW RISK SITE. EROSION PREVENTION AND SEDIMENT CONTROL MEASURES AND PROCESSES SHALL BE IN ACCORDANCE WITH THE STANDARDS SET FORTH IN THE LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL AVAILABLE FROM THE VERMONT DEPARTMENT OF ENVIRONMENTAL WATER MANAGEMENT DIVISION.
 2. AN ON-SITE PLAN COORDINATOR (OSPC) SHALL IMPLEMENT THIS PLAN. THE OWNER/CONTRACTOR WILL NAME THIS INDIVIDUAL AND SHOW THE QUALIFICATIONS INDICATING HIS OR HER SUITABILITY FOR THE POSITION. THE OSPC SHALL READ THIS DOCUMENT AND REVIEW THE DRAWINGS AND DOCUMENTS IN THIS SUBMISSION. COPIES OF THESE MATERIALS AND THE INSPECTION LOGS WILL BE KEPT ON SITE AT ALL TIMES. THE OSPC SHALL BE VERSED IN STRUCTURAL AND NON-STRUCTURAL EROSION PREVENTION MEASURES, AND HE OR SHE WILL HAVE SUFFICIENT KNOWLEDGE TO TROUBLESHOOT ON-SITE EROSION ISSUES AND PROVIDE EFFECTIVE REMEDIES. THE RESPONSIBILITIES OF THE OSPC INCLUDE THE MONITORING OF THE EROSION AND SEDIMENT CONTROL MEASURES FOR THEIR INTEGRITY AND EFFECTIVENESS AND DETERMINING WHEN MAINTENANCE OR REPAIRS ARE NECESSARY. THE OSPC SHALL HAVE THE AUTHORITY TO STOP WORK AND CONTROL EARTH EXCAVATION ACTIVITIES ON SITE. INSPECTIONS SHALL BE MADE ON A WEEKLY BASIS, BUT ALL DEVICES SHALL BE INSPECTED AFTER ANY RAINFALL GENERATING RUNOFF FROM THE SITE. AN INSPECTION REPORTING FORM SHALL BE COMPLETED AND SIGNED DURING SITE INSPECTIONS. THESE REPORTS SHALL BE KEPT ON-SITE WITH THE OTHER DOCUMENTS RELATING TO EROSION PREVENTION AND SEDIMENT CONTROL.
 3. THE EROSION CONTROL PLAN EVOLVES AS DESIGNS ARE FINALIZED. MODIFICATIONS WILL BE DEVELOPED AND INCLUDED AS THE PROJECT PROCEEDS. EROSION CONTROL STRUCTURES AND DEVICES SHALL BE MAINTAINED AND INSPECTED BY THE ON-SITE COORDINATOR AS REQUIRED AND BEFORE PREDICTED RAIN EVENTS.
 4. A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE PRIOR TO ANY EARTHWORK OR OTHER SITE WORK. AT THIS TIME, THE ENGINEER WILL REVIEW THE EROSION CONTROL PLAN WITH THE CONTRACTOR, THE ON-SITE PLAN COORDINATOR, AND REPRESENTATIVE FROM THE CITY OF BURLINGTON. BACKGROUND INFORMATION ON THE GOALS FOR EROSION PREVENTION AND SEDIMENT CONTROL WILL BE DISCUSSED, AS WELL AS A PLAN TO MEET THESE GOALS. INPUT FROM THE CONTRACTOR IS ESSENTIAL. ANY CHANGES AGREED TO DURING THE MEETING WILL BE SUBMITTED TO THE CITY.
 5. EROSION PREVENTION WILL BE THE PRIMARY METHOD OF PREVENTING RUNOFF CONTAINING SEDIMENT TO SEWERS OR RECEIVING WATERS. CAREFUL CONSTRUCTION TECHNIQUES ARE THE MOST EFFECTIVE METHOD OF PREVENTING EROSION. SEDIMENT CONTROL IS CONSIDERED SECONDARY TO PREVENT IMPACTS TO THE CITY SYSTEMS.
 6. WITHIN EACH WORK ITEM, THE CONSTRUCTION WILL BE SEQUENCED SO THAT WORK ON THE NEXT PART WILL NOT BEGIN UNTIL THE PREVIOUS PART IS COMPLETED.
 - A. DELINEATE LIMITS OF DISTURBANCE WITH FIBERGLASS BARRIER TAPE WHERE SHOWN ON PLAN.
 - B. PREPARE AREA WITH EROSION AND SEDIMENT CONTROL MEASURES AS REQUIRED.
 - C. CONSTRUCT EROSION AND SEDIMENT CONTROL STRUCTURES. MATERIALS SHALL BE AVAILABLE ON SITE AT ALL TIMES.
 - D. INSTALL CATCH BASIN PROTECTION ON ALL CATCH BASINS WHERE SEDIMENT COULD BE DISCHARGED DURING CONSTRUCTION.
 - E. RELOCATE AND/OR INSTALL UTILITIES (SEWER, STORM, AND WATER), MANHOLES/CATCH BASINS, AND BACKFILL AS UTILITIES ARE INSTALLED.
 - F. CONSTRUCT BUILDING FOUNDATION(S).
 - G. CONSTRUCT WALKWAYS, GRADE SITE, PREPARE AND APPLY TEMPORARY SEEDING. APPLY EROSION CONTROL BLANKETS AS NEEDED.
 - H. CLEAN OUT SEDIMENT CONTROL DEVICES OF ACCUMULATED MATERIAL (AS NEEDED).
 7. REFER TO SHEET C-4 FOR EROSION CONTROL DETAILS.
 8. LIMITS OF DISTURBANCE - FIBERGLASS BARRIER TAPE OR ORANGE CONSTRUCTION FENCING SHALL DELINEATE VEHICULAR AND FOOT TRAFFIC - PROTECTING UNDISTURBED AREAS TO THE EXTENT PRACTICABLE. SILT FENCE ALONE SHALL NOT BE USED TO DELINEATE LIMITS OF DISTURBANCE.
 9. AREAS OF DISTURBED EARTH SHALL NOT BE EXPOSED FOR MORE THAN 14 DAYS WITHOUT TEMPORARY STABILIZATION (I.E. MULCH, EROSION BLANKET OR CRUSHED STONE). EXCEPTIONS TO THIS ARE:
 - A. UTILITY TRENCH EXCAVATION AND BUILDING FOUNDATION EXCAVATION (CLOSED EXCAVATION).
 - B. WORK IS PLANNED WITHIN 24HRS AND NO PRECIPITATION IS EXPECTED.
 10. THE EXCAVATED MATERIAL FROM DIGGING TRENCHES FOR INSTALLING UTILITIES WILL BE PLACED ON THE UPHILL SIDE OF THE TRENCH TO CAPTURE SEDIMENT LOADED STORMWATER RUNOFF IN THE TRENCH.
 11. RELEASE OF UNTREATED WATER FROM DEWATERING PROCEDURES OFF PROPERTY OR INTO A STORM OR SANITARY SEWER IS NOT PERMITTED. A SEDIMENT REMOVAL SYSTEM SHALL BE IMPLEMENTED TO PREVENT RELEASE OF SEDIMENT ENTRAINED WATER FROM DEWATERING PROCEDURES. THE SEDIMENT REMOVAL SYSTEM MUST BE APPROVED BY THE ENGINEER.
 12. EROSION CONTROL BLANKET (NA GREEN SC150 OR APPROVED EQUIVALENT INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS) SHALL BE USED IN PLACE OF MULCH WHERE NECESSARY DUE TO WIND AND FOOT/CONSTRUCTION VEHICLE TRAFFIC.
 13. FINAL STABILIZATION MEASURES SHALL INCLUDE:
 - A. TOPSOIL TEMPORARY SEEDING AREAS AND APPLY PERMANENT VEGETATION AS PER APPROVED SITE PLAN. MAINTAIN EROSION CONTROL MEASURES AS NEEDED UNTIL A VIGOROUS PERMANENT COVER IS ESTABLISHED. SEEDING MUST BE COMPLETED BEFORE SEPTEMBER 15TH.
 - B. REMOVE EROSION PREVENTION MEASURES FOR EACH WORK ITEM AT ITS CONCLUSION.
 - C. REMOVE SEDIMENT CONTROL STRUCTURES AFTER PERMANENT VEGETATIVE COVER AND PAVEMENT ARE ESTABLISHED, ONLY WHEN APPROVED BY THE ENGINEER.
 14. SOILS NOT REMOVED FROM THE SITE SHALL BE STORED AND PROTECTED WITH SILT FENCE AROUND THEIR PERIMETER UNTIL THEY ARE PLACED OR REMOVED.
 15. VEGETATION - SEE SPECIFICATIONS AND SITE PLAN FOR PERMANENT LAWN MATERIALS, LANDSCAPING, TREES AND GROUND COVER. A MIX OF TALL FESCUE (APPLIED AT 10 LBS./ACRE), PERENNIAL RYEGRASS (5 LBS./ACRE) AND BIRDSFOOT TREFOIL (5 LBS./ACRE) WILL BE USED TO ESTABLISH A TEMPORARY VEGETATIVE COVER ON LAWNS.
 16. THE CONTRACTOR SHALL INSTALL PERMANENT LAWN MATERIALS, LANDSCAPING, TREES, AND GROUND COVER AS SOON AS POSSIBLE FOLLOWING CONSTRUCTION.

PRELIMINARY
NOT FOR CONSTRUCTION
DATE: 01/28/13

EROSION PREVENTION & SEDIMENT CONTROL PLAN	
RICHARD BOVE - GEORGE STREET LOFTS	
3 & 13 GEORGE STREET	
BURLINGTON, VERMONT	
RUGGIANO engineering, inc. 5 LAKE STREET ST. ALBANS, VERMONT 05478 PHONE - (802) 524-9300 FAX - (802) 524-9700 COPYRIGHT © 2013 - RUGGIANO ENGINEERING, INC.	PROJECT NO. 12053 DRAWN BY: DJL CHECKED BY: CRC SCALE: 1" = 20' DATE: 01/28/13
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